The switch monitor unit includes plural monitor switches mounted in a position capable of short-circuiting the primary coil of the high voltage transformer, and switched on and off according to the opening and closing operations of the cooking chamber door; and a fuse mounted in a voltage supply path through the plural monitor switches and the DC power supply.

In order to achieve a further object, according to a further embodiment of the present invention, in a driving circuit of a DC microwave oven having an inverting unit for converting a DC voltage of a DC power supply into an AC voltage by driving pulses, a high voltage transformer for transforming the AC voltage applied by the driving of the inverting unit and supplying the transformed AC voltage to a magnetron, and a pulse driving unit for generating the driving pulses, a switch monitor unit is provided for cutting off the supply of a voltage to the high voltage transformer from the DC power supply when a cooking chamber door is in an open state.

Further, in order to achieve the above object, a driving method of a DC microwave oven according to the present invention, in a driving method of a DC microwave oven having an inverting unit for converting a DC voltage of a DC power supply into an AC voltage by driving pulses, a high voltage transformer for transforming the AC voltage applied by the driving of the inverting unit and supplying the transformed AC voltage to a magnetron, a pulse driving unit for generating the driving pulses, and a switching unit for switching on and off the voltage supply to the pulse driving unit from the DC power voltage, comprises steps of a) driving the pulse driving unit by controlling the switching unit if a cooking chamber door is closed and a cooking start selection signal is inputted; b) detecting whether

an excessive current is supplied to the high voltage transformer through the inverting unit driven by the pulse driving unit; and c) cutting off the voltage supply to the magnetron by stopping the driving of the pulse driving unit if the excessive current is detected.

BRIEF DESCRIPTION OF THE DRAWINGS

The above objects and the other advantages of the present invention will become more apparent by describing in detail a preferred embodiments thereof with reference to the attached drawings, in which:

FIG. 1 is a view for showing a driving circuit of a DC microwave oven according to a first embodiment of the present invention;

FIG. 2 is a view for showing a driving circuit of a DC microwave oven according to a second embodiment of a DC microwave oven according to a second embodiment of the present invention; and

FIG. 3 is a view for showing a driving circuit of a DC microwave oven according to a third embodiment of a DC microwave oven according to a third embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 is a view for showing a driving circuit of a DC microwave oven according to a first embodiment of the present invention.

Referring to FIG. 1, the driving circuit of a DC microwave oven is equipped with a DC power supply DC, a door sensing switch DSW, a voltage regulator 30, a primary interlock switch PSW, a secondary interlock switch SSW, and a microcomputer 40.

Further, the driving circuit of a DC microwave oven includes a pulse driving unit VFC1, a push-pull circuit having first and second field effect transistors FET1 and FET2, a high voltage transformer HVT, a magnetron MGT, a door lamp L, a fan motor F, first and second relay switches RY1 and RY2, and first and second monitor switches MSW1 and MSW2.

The push-pull circuit is applied to an inverter unit to supply voltages from the power supply DC to the primary coil T1 of the high voltage transformer HVT through the driving of the first and second field effect transistors FET1 and FET2 based on a push-pull mode. That is, the first and second field effect transistors FET1 and FET2 are connected to the power supply DC around a tap formed at the center portion of the primary coil T1 of the high voltage transformer HVT to form alternate current passageways.

The pulse driving unit VFC of a pulse driving means generates first and second driving pulses, through first and second pulse output terminals OUT1 and OUT2, respectively, which alternately inverts the pulse periods.

The pulse driving unit VFC is supplied with a predetermined DC voltage, for example, 15V, through a voltage terminal Vcc connected through the DC power supply DC. Accordingly, the first and second field effect transistors FET1 and FET2 receives the first and second driving pulses generated from the output terminal OUT1 and OUT2 through the respective gage terminals, respectively, to be alternately turned on and off.